IN THE SPECIFICATION

Please amend the paragraph beginning on page8, line 21 as follows:

A turbo decoder algorithm used in an article by S.S. Pietrobon, "A Simplification of the Modified Bahl Decoding Algorithm for Systematic Convolutional Codes", *Int. Symp. Inform. Theory & its Applic*, pp.1073-1077, (Nov. 1994) can be described as Eq. 1 to Eq. 4 by using equations defined in the article by Pietrobon in 1998 as follows:

$$D_k^{i,m} = \frac{2}{\sigma^2}(x_k i + y_k Y_k^{i,m}) \qquad \text{Eq. 1}$$

$$A_k^{i,m} = D_k^{i,m} + \overset{1}{\underset{j=0}{E}} A_{k-1}^{j,b(j,m)} \qquad \text{Eq. 2}$$

$$B_k^{i,m} = \overset{1}{\underset{j=0}{E}} (B_{k+1}^{j,f(i,m)} + D_{k+1}^{j,f(i,m)}) \qquad \text{Eq. 3}$$

$$L_k = \overset{2^v-1}{\underset{m=0}{E}} (A_k^{1,m} + B_k^{1,m}) - \overset{2^v-1}{\underset{m=0}{E}} (A_k^{0,m} + B_k^{0,m}) \qquad \text{Eq. 4}$$

where k is a time, a sequence or a stage and is positive number with "0". i is an input of k^{th} sequence and j is a $(k+1)^{th}$ input for a forward state metric or a $(k-1)^{th}$ input for a reverse state metric. The i and j are "0" or "1". m is a state of a trellis diagram and v is number of memory in a recursive systematic encoder. The m is positive integer including "0" and the v is positive integer. σ^2 denotes distribution of input symbols for an additive white gaussian noise (AWGN). X_k is k^{th} transmit information bit of the

AWGN. Y_k is k^{th} transmit information bit of the AWGN. $Y_k^{i,m}$ is a generating code word for *k, i, m.* D_k is k^{th} metric. A_k is a k^{th} forward state metric. *b(j,m)* is a *(k-1)*th reverse state, which is related k^{th} state between input *j* and state *m.* E is a function *E* defined as $\overset{1}{\underset{j=0}{E}} A_k^j = A_k^0 \; E \; A_k^1 = log_e(e^{A_k^0} + e^{A_k^1})$. B_k is a k^{th} reverse state metric. *f(i,m)* is *(k+1)*th state related to k^{th} state with input *i* and state *m.* L_k is a log likelihood ratio.